

**PERFORMANCE WORK SPECIFICATION
(PWS)**

FOR THE

**DESIGN & ENGINEERING SUPPORT PROGRAM II
(DESP II)**

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Prepared by:

OGDEN AIR LOGISTICS CENTER (OO-ALC/ENR)
HILL AIR FORCE BASE, UTAH 84056

Preparer: David Lindquist

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ACRONYMS

A&AS	Advisory and Assistance Services
ACO	Administrative Contracting Officer
ADPE	Automated Data Processing Equipment
AFMC	Air Force Material Command
AFOSH	Air Force Occupational Safety & Health Standards
AIS	Automated Information System
ATE	Automatic Test Equipment
BCE	Base Civil Engineering
CAD	Computer Aided Drafting
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CE	Civil Engineering
CET	Contractual Engineering Task
CI	Configuration Item
CPARS	Contractor Performance Assessment Rating System
COTS	Commercial-off-the-Shelf
CSCI	Computer Software Configuration Item
DESP II	Design & Engineering Support Program II
DID	Data Item Description
DOD	Department of Defense
D&V	Demonstration & Validation
ECP	Engineering Change Proposals
EMC	Electromagnetic Compatibility
ESS	Environmental Stress Screening
FCA	Functional Configuration Audit
GFE	Government Furnished Equipment
GFM	Government Furnished Material
GFP	Government Furnished Property
GFS	Government Furnished Software
ILS	Integrated Logistics Support
IT	Information Technology
IV&V	Independent Verification and Validation
JTR	Joint Travel Regulations
LSA	Logistics Support Analysis
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NDI	Non-Destructive Inspection
OCI	Organizational Conflict of Interest
OFPs	Operational Flight Programs
OSHA	Occupational, Safety, and Health Administration
PCA	Physical Configuration Audit
PDR	Preliminary Design Review
POC	Point of Contact

PWS	Performance Work Specification
R&M	Reliability & Maintainability
SSR	Software Specification Review
TDP	Technical Data Package
TOI	Task order Initiator
TRR	Test Readiness Review
VDD	Version Description Document

DEFINITIONS

Limited Production:

DESP II task orders can include the production and delivery of a limited number of end-items. These end-items can be new or modified piece parts, sub-system components, or systems, which were developed or improved as a result of the subject task order. The amount of end-items are not limited by quantity or dollar amount, but rather by the number of end-items required to cover the lead-time until delivery can begin under a separate production contract, so long as the task order's primary purpose is to perform an identifiable task rather than to furnish an end item of supply (ref FAR 37.101). If required, limited production will be established on individual task orders. Also, the contractor will be bound by the terms of the Organizational Conflict of Interest (OCI) clause in the basic contract.

Incidental Construction:

Limited construction-related activities that are essential in order to perform the services required in the DESP II engineering services task orders. Construction cannot be the main purpose of the task order, but rather incidental work required for the successful completion of the task order. **Furthermore in no event shall construction costs exceed \$100,000.** For incidental construction, coordination between the Task Order Initiator (TOI) and Base Civil Engineering (BCE) will be required and may involve using an AF Form 332 or equivalent before work can begin. The contractor may be required to participate in the coordination and approval process.

1.0 PURPOSE AND SCOPE

1.1 Purpose

This Performance Work Specification (PWS) describes the technical and administrative requirements necessary to create and implement a program to provide design and engineering/technical support services for the Department of Defense mission weapon systems, components, and support equipment (including engineering design, integration, system modifications, limited manufacturing, activities to support process analysis and improvements for maintenance/repair operations; reference Attachment I for a listing of example Air Force weapon systems. While the DESP II contract is specifically established within the Air Force Material Command (AFMC) and the Army Tank and Automotive Command (TACOM), this dynamic contract vehicle may be used by all other Air Force/Army commands, DOD agencies (e.g., Navy, Marines), and other government entities (e.g., NASA, DOE, DOT, DOS, EPA, OSHA, Coast Guard, Homeland Security, FAA, FEMA, etc.) having similar systems and/or needs.

1.2 Objectives

Contractor responsibilities shall include fulfilling the requirements of the basic contract and specific task assignments as designated by individual task orders; including requirements documents and specifications. Contract efforts shall focus on improvements consistent with the following objectives:

- a) Exploit lower life-cycle cost alternatives in system configurations by using current technology components and adapting common equipment to multiple requirements and applications.
- b) Improve the productivity, effectiveness, and efficiency, and environmental friendliness of Air Force maintenance, repair, and operational support activities; including related processes. When appropriate, provide for the automation of such processes (including ADPE hardware and/or software).
- c) Improve the performance, accuracy, reliability, maintainability, deployability, survivability, and supportability of weapon systems, subsystems, and equipment (including support equipment).
- d) Develop new approaches to better accommodate life cycle cost considerations in system development and support, such as improved specifications, standards, processes, and techniques using techniques such as Process Base-lining, modeling and simulation.
- e) Evaluate and insert new technology to extend the life or improve the performance of existing weapon systems, including their support systems and to modernize and improve existing operational support, maintenance, and repair processes.

- f) Reduce life cycle costs of weapon system management through improved management techniques, process improvement, process re-engineering, automation, configuration management, and quality assurance.
- g) Utilize a systems approach to design efforts in meeting technical requirements laid out by each Task order.
- h) Perform studies that address the assessment of technical and/or logistical problems to include potential solutions and alternatives; technical and cost trade-offs; and defining project designs and development. These may include areas such as Manufacturing Engineering, Industrial Engineering, and Process Engineering in support of Lean Manufacturing.
- i) Establish, maintain, integrate, utilize, and provide/develop training for processes and procedures to manufacture and install prototype systems, to include both hardware and software, for the purposes of testing in both artificial or real-time environments against the criteria set forth by each Task order, or otherwise specified by a particular weapon system requirement.
- j) Develop and maintain all necessary test plans and procedures, which take into account both user requirements and applicable environmental, health, and safety standards.
- k) Develop and produce technical documentation to include changes in Technical Orders, Technical Data Packages, engineering drawings, associated lists, and specifications as a result of newly developed and/or modified systems provided for under a particular Task order.
- l) Provide rapid access to limited-production runs for modified piece parts, sub-system components, or systems, which were developed or improved as a result of a specific task order.
- m) Provide engineering and other professional services for pollution prevention, environmental compliance, and actively pursue the health and well being of military and civilian personnel. Improve the environmental friendliness, and environmental protection and remediation of existing sites and vulnerability. Develop alternate fuel sources. Improve hazardous material management.
- n) Provide redesign efforts in support of diminishing material and manufacturing sources including efforts such as reverse engineering.
- o) A&AS support services in accordance with any of the objectives listed above.
- p) Provide design/engineering studies/analysis that ensure operational safety, suitability, and effectiveness of weapon systems as part of system modification or manufacturing process changes.

1.3 Scope

The objectives and requirements identified within in this PWS are described in general terms. Each task order shall specifically address task requirements, project scheduling, and other related performance criteria as necessary. Engineering services may be applied on a level of effort basis in support of allowable categories of labor per objective in Paragraph 1.2

2.0 CONTRACTOR REQUIREMENTS

2.1 Personnel Qualifications

Upon contract award, the successful offeror's identified labor categories will be incorporated as an attachment in Section J of their contract. Only those labor categories listed in the attachment may be used for DESP II orders, unless a waiver has been granted prior to commencement of the task. The waiver process is defined in the User's Guide.

2.2 Single Managers

In accordance with the Identification of Key Positions clause found in section H of the contract, the contractor shall establish a single manager point of contact (POC) for program management, and one POC for contracting, having authority and responsibility for the overall effort for all task orders. The intent of each single manager is to give the government agencies one point of contact for each management area to avoid possible duplication of effort from multiple tasks.

2.3 Program Management

The contractor shall be responsible for managing all aspects of the contract and awarded task orders, to include cost, schedule, performance and contract management. The contractor shall act as the task integrator, assuring that all technical and program elements of a task order provide a fully integrated approach. The contractor shall also participate in semi-annual Program Management Reviews, where DESP II performance goals and metrics will be discussed and areas for process improvement identified. (Ref. Attachment 14: DESP II Performance Plan in the User's Guide.)

2.4 Subcontractor Management

The prime contractor may disseminate portions of individual task orders to subcontractors based upon areas of expertise. The contractor may subcontract with other companies to establish a strong technical capability to meet diverse task order requirements. The prime contractor shall be held fully responsible for all aspects of task order performance and oversight, regardless of any arrangement between the prime and its proposed subcontractors.

2.5 Funding Actions and Small Business Participation Reporting (reference CDRL C001)

The contractor shall report new contract actions that affect contract funding each reporting period. This report shall include all new task orders and modifications that increase or decrease task order funding. This will be used to reconcile the contracting actions between the government and the contractor to ensure contract ceiling is not breeched.

All prime contractors shall also report Small Business Participation in accordance the Enhanced Small Business Participation clause found in section H of the basic contract. The report shall provide Small Business Participation status on all DESP II orders. The information provided on

the CDRL will be used to verify that the contractor is meeting their small business goals for the DESP II program.

The small business performance will be used in the following ways:

1. Reported on the annual CPARS.
2. Included as part of the Delphi evaluation criteria on competed orders per the Delphi method called out in the User's Guide.

The contractor will be evaluated according to the following table. The report shall contain the average for all orders. The report shall contain the total small business dollars, as defined in the Small Business Participation clause found in Section H of the contract, for the reporting period and the cumulative total.

Performance Objective	CDRL	DESP II Goal	Performance Threshold
Small Business Subcontracting	C001	<p>Other than small business prime contractors: The percent of total small business subcontract dollars shall be no less than <u>20%</u> of the total annual contract dollars.</p> <p>Small business prime contractors: The percent of total Small Business Participation dollars, as defined in clause 9952.763-H763, shall be no less than <u>20%</u> of the total contract dollars.</p>	Performance is unacceptable when small business subcontracting falls below 20%.

2.6 Service Delivery Summary (SDS)

Performance Objective	Performance Threshold	Method of Surveillance
Customer Satisfaction	Customer Satisfaction ratings: Not less than "Green" CPAR rating, and not less than "4 - Satisfactory" on Task Order Initiator Feedback Questionnaires	Customer Complaint; Task Order Initiator Feedback Questionnaires; and CPAR
Accuracy of Cost Estimates	Cost Control ratings: Not : Not less than "Green" CPAR rating, and not less than "4 - Satisfactory" on Task Order Initiator Feedback Questionnaires	Customer Complaint; Task Order Initiator Feedback Questionnaires; and CPAR
Increased Small Business Participation	20% of total contract dollars to be subcontracted to Small Business concerns. 12% of all task orders awarded to Small Business prime contractors.	Reporting from both Small Business and Other Than Small Business prime contractors (CDRL C001) will provide dollars subcontracted to Small Business. Track all small business awards by % of total # of task orders and % of total contract dollars in DESP II database.

Note: Additionally, a SDS will also be required for individual task orders.

3.0 INDIVIDUAL TASK ORDER REQUIREMENTS

The contractor shall perform tasks in accordance with separately issued task orders providing engineering/technical services, testing, items, data, and documentation as specified therein. The general approach is to use engineering as the basis for redesign, technology insertion, and other implementation efforts.

The contractor shall supply the government with services including, but not limited to, expertise, management, administration/clerical support, information repository (e.g., library of technical data), material, transportation, and facilities, as required by task order.

3.1 Field Representation

In some cases the complexity of system problems will warrant extended contractor representation at operational bases and repair depots. In such instances the contractor may be required to physically observe and evaluate system performance, collect data, provide on-the-spot assistance for operational problems, and perform as a liaison between government, contractor, and/or subcontractor representatives. Requirements for field representation may be presented to the contractor and required as an integral part of problem resolution and/or task assignment. Contractor personnel assigned to field activities shall be fully qualified individuals who have a specific knowledge of the systems related to a given task order.

3.2 Requirement Preparation

Requirements shall be prepared in accordance with the Contractual Engineering Task (CET) Development guidance found in the User's Guide. The DESP II is a competed effort and each order is required to comply with the fair opportunities process outlined in clause 5352.216-9000. When task orders are to be competed it is not appropriate to only include one of the potential competitors in defining the requirement. Under a pre-approved sole source task order approach it is appropriate for the Contractor and Government to work together in an IPT environment to work contract actions, but only after sole source justification has been approved.

3.3 Access to Facilities and Property

Access to government facilities and sites are limited. Therefore, the contractor shall coordinate the need, time, and personnel requiring access with the TOI prior to need.

Contractor clearances shall be confirmed prior to access to any restricted areas. Access to appropriate and affected data systems will be provided as authorized by the government. All contractor personnel shall comply with facility requirements for vehicle decals and personnel identification badges before being allowed access to facilities to accomplish the tasks defined in individual task orders. Local government program manager is responsible for local requirements and procedures.

3.4 Task Order Deliverables/Inspection & Acceptance of Services

The TOI will be the point of contact to reject or require correction of any deficiencies found in deliverables. In the event of rejection of any deliverable, the Contractor will be notified in writing by the contracting officer of the specific reasons why the deliverable was rejected.

3.4.1 Task Order Data Requirements

The contractor shall provide data as required on the DD Form 1423, CDRL provided for the individual task order. A pick list of common Data Item Descriptions (DIDs) that may be required on individual task order is provided in Attachment 12 of the User's Guide.

3.5 Security

The contractor shall not divulge any information regarding files, data, processing activities/functions, user ID's, passwords, or other knowledge that may be gained, to anyone who is not authorized to have access to such information. Contractor personnel shall abide by all Government rules, procedures, and standards of conduct. Some task orders may have security requirements that require the inclusion of a DD Form 254 in the task order solicitation. In such an event, only those contractors who meet the proper security requirements will be considered for task order award.

3.6 Release/Removal of Documentation

The contractor shall not release or remove system documentation, data, or reports generated by or through use of any government systems. All requests for information shall be forwarded to the Contracting Officer who will request approval from the TOI.

3.7 Automated Information Systems (AIS) Security

Contractors requiring access to government AIS shall have background investigations and security awareness training completed prior to the start of contract performance. The TOI will be responsible to ensure the background investigation gets done, per local requirements. When the period of performance is complete or and contractor personnel leave work on this project they will have 5 days to terminate all their network user account and to return all access cards and base identification badges.

3.8 Environmental Compliance

All chemical and material products shall meet performance specifications and shall not violate the environmental requirements of any applicable local, state, or federal entity. It shall be the contractor's responsibility to ensure project compliance with all environmental regulations, ordinances, and/or statutes of any sovereign governing the contractor or as identified by specific Task order. Furthermore, it shall be the contractor's responsibility to ensure that all waste products generated in assigned efforts are disposed of in a safe manner, complying with all applicable regulations. In no event shall the government be liable for the contractor's failure to comply with applicable environmental requirements. The contractor agrees to hold harmless the United States should the contractor violate any environmental regulation, ordinance, or statute. In the case where more than one environmental requirement is present, the contractor shall comply with the stricter requirement. Should there be a conflict between environmental regulations/ordinances/statutes and the contract's specifications, the contractor shall, in writing, contact the contracting officer for a written resolution. Any adjustment in the specifications or contract terms by the contractor without such a resolution shall be at the contractor's risk and expense. Environmental testing shall be conducted in accordance with approved procedures and as dictated by individual task order.

3.9 Quality Control Provisions

The contractor shall develop a quality control program. This program may be tailored to meet or exceed the requirement for individual task orders. Individual task orders may establish additional quality control measures. The Prime contractor shall be responsible for the performance of quality control activities, ensuring the performance of products, subcontractors, and vendors. Specific quality requirements will be determined for each CET.

3.10 Travel Requirements

Individual task order travel requirements will be specified in each individual task order. Airfare for travel and per diem shall be billed IAW Joint Travel Regulations (JTR). The contractor shall be responsible for making their own travel and lodging arrangements as necessary to support the task requirement.

3.11 Safety

Individual task orders may require the contractor to comply with safety provisions, e.g., technical specifications, technical publications, MIL-Standards, Federal Occupational Safety and Health Standards (Title 29 CFR. Part 1910). or other applicable nationally recognized or local sources of safety, health, and fire prevention standards. Safety shall be conducted in accordance with approved procedures and as dictated by individual task order.

3.12 Mission-Essential Services

Inclusion of continuation of essential Department of Defense contractor services during crisis has been incorporated in the basic contract. The requirement of AFI 63-124 (9 Feb 2004), paragraph 1.2.7.2 and DoDI 3020.37 will be addressed at the task order level. Mission essential issues shall be addressed at the task order level.

3.13 Government-Furnished Property

Government-Furnished Property requirements will be determined at the task order level.

4.0 FUNCTIONAL CATEGORY REQUIREMENTS

(The following items may apply to each individual Functional Category listed in Section 5.0 below)

4.1 Studies

The contractor shall perform studies as dictated by task order. The intent of these studies is to provide the government with an assessment, and/or investigation of existing problems, failures and possible solutions/alternatives; technical and cost trade-offs; and requirements for design, development, evaluation, and process improvement efforts. Studies shall be performed and documented as specified by individual task order.

4.2 Technology Insertion

Equipment redesign and software automation shall consider the latest technology available. To the greatest extent possible, the government will provide known information on applicable technologies available in government laboratories; this technology and technology available in industry shall be considered in system design/redesign. Commercial-off-the-shelf (COTS)

equipment and software meeting the requirements of individual task orders shall be used whenever possible.

4.3 Supplies and Services

The contractor shall provide all supplies and services necessary to successfully complete each task order.

4.4 Packaging

Each production item, when required, shall be packaged and preserved in accordance with the packaging and preservation called out in each task order.

4.5 Fabrication

As required by individual task order, the contractor shall design, develop, and provide limited manufacturing/production. Manufacturing/Production may be provided to resolve critical support issues or to construct prototypes/pre-production units in sufficient specified quantities to allow for both contractor and government testing.

4.6 Prototype/Pre-Production Development, Build, Test, and Evaluation

The contractor shall develop and provide prototypes/preproduction items in quantities as specified to allow for testing by both the contractor and government. When required by Task order, the contractor shall build prototype and/or preproduction units; conduct tests and evaluate the item(s) against specified requirements; and deliver an industry-validated technical documentation package. The contractor may also be required to perform first article testing. When deemed appropriate by the Air Force, the contractor shall also provide for rapid delivery of limited production quantities as specifically described by task order. The contractor may be tasked to assist the industrial sources as required in producing prototypes and/or first articles.

4.7 Documentation

If required by individual task order, documentation shall be created/revised to include information derived from the manufacture, test, and evaluation.

4.8 Standard Items

All designs shall use COTS, standard parts, materials, and processes whenever practical. The requirements for installation, operation, maintenance, removal, and repair shall be satisfied by the use of common hand tools. Any deviations from this requirement must have advanced written approval from the contracting officer.

4.9 Design Reviews/Audits

The Contractor shall prepare for and participate in formally scheduled reviews/audits (e.g., SSR, PDR, CDR, TRR, FCA/PCA) to be conducted in accordance with standards as set for by individual task order (e.g., established government and/or industry standards).

4.10 Training

The contractor may be required to identify training requirements and obtain or develop training programs. The contractor shall develop training manuals and other training documentation or training aids as specified by task order. The contractor may be required conduct first-time

training for government personnel to assure proper operation, maintenance, and testing of systems.

4.11 Engineering Services

The contractor shall perform engineering services as specified in assigned task orders. These services may include services listed herein, but are not limited to: analytical engineering, system integration engineering, independent engineering tests, and development of engineering concepts and design packages. Engineering services shall support reliability and maintainability analyses, environmental impact studies, acquisition of new systems and subsystems, process improvement, and development and qualification of replacement parts for out of production or obsolete items, including reverse engineering. Engineering shall support accident investigations and failure analyses. One-time damage analysis and damage tolerance assessments may be required as well as on-the-spot design of temporary and permanent repairs

4.12 Logistics Support Analysis (LSA)

To ensure effective integration of product/item engineering and logistics support, the contractor shall establish an LSA Program as directed by individual Task order. The contractor shall review any existing Integrated Logistics Support (ILS) Plan and/or LSA Plan for subsystems that are the target of redesign. After this review, modifications and changes shall be identified and the contractor shall prepare an LSA Plan in accordance with dictated standards. Prior to approval of the LSA Plan, the contractor may be required to host an LSA Guidance Conference to review and further define LSA requirements. Delineation of tailored LSA task deliverables shall be accomplished at the LSA Guidance Conference for each task order.

4.13 Source Qualification

The contractor may be required to assist in the qualification of sources as specified by individual task order.

4.14 Test and Evaluation

The contractor may be required to define and develop test programs, plans, and procedures, conduct testing and evaluation of results, and document the results of testing and evaluation as specified by task order. Types of testing may include, but will not be limited to: hardware and software component testing, subsystem and system level development testing, system compatibility testing, acceptance testing, functional testing, integration testing, qualification testing, and beta testing. If a phased approach is used the contractor may be required to implement corrective actions discovered in previous testing before retesting. The contractor shall conduct testing in total or shall provide technical support to government personnel as specified by individual task order.

Test and evaluation when required by individual task order may include but not limited to:

- Independent Verification and Validation (IV&V)
- Development Test & Evaluation
- Operational Test & Evaluation
- Demonstration and Validation (D&V)

- Functional Tests
- Self-Test/Built-In Test
- Functional Tests
- Integrated Tests
- Environmental Tests
- Electromagnetic Interference Tests/Effects
- Reliability Tests
- Maintainability Test
- Safety of Flight Test
- Flight Test
- Human Factors
- Environmental Stress Screening (ESS) Tests
- Existing Test Equipment
- Aging and Surveillance Tests
- Coupon tests
- Component tests
- Metallurgical/materials tests
- Corrosion tests
- Fatigue tests
- Full-scale structural tests
- Performance tests
- Application tests
- Destructive teardown tests
- Nuclear Hardness and Survivability Tests

4.14.1 Laboratory Services

As required by individual task order the contractor may be required to supply independent laboratory services to analyze test and inspect materials, component parts and sample specimens. These may include 3rd party analysis, testing, validation, verification and inspection of metallurgical, chemical or other samples. This may include Non-Destructive Inspection (NDI) or destructive test methods

4.15 Producibility

The contractor may be required to establish a producibility program that assures all designs are producible and that producibility enhancements are considered in the design process, consider long term logistics support analysis concerns and life cycle cost impacts. The contractor shall provide for the limited production of parts, components, systems, support equipment, test equipment, etc. as necessary to meet mission critical functions as determined by the Air Force and as dictated by individual task order.

4.16 Installation

The contractor may be required to install, or assist the government in installing, component or system hardware and software as specified by individual task orders. When such installation is required, the contractor shall assist the government in identifying all equipment and utilities

required for installation at the installation site. The contractor may be tasked to assist the government in identifying required Government Furnished Equipment (GFE) and Government Furnished Material (GFM) necessary for installation.

If incidental construction is required for installation of equipment, coordination between the TOI and BCE will be required and may involve using an AF Form 332 or equivalent before work can begin. The contractor may be required to participate in the coordination and approval process.

4.17 Human Factors Engineering

The contractor may apply human factors engineering design criteria, principles, practices and standards to the design process to achieve ergonomics, effectiveness, simplicity, efficiency, reliability and safety of system operation, training and maintenance; as required by individual task order.

4.18 Reliability/Maintainability

As identified within each task order, system conformance to reliability and maintainability requirements shall be predicted in accordance with approved demonstration plans. Actual demonstration of reliability and maintainability conformance shall be performed in accordance with approved test plans. The contractor shall use an integrated approach and specific analytical techniques to predict and verify the performance of systems throughout the definition, design, and test phases of their development.

4.19 Data Rights

All data will be developed and provided in accordance with the data rights clauses.

5.0 FUNCTIONAL CATEGORIES

5.1 Functional Category I

5.1.1 Technical Documentation

If directed by task order, the contractor shall develop, modify and/or validate Technical Orders (T.O.s), manuals, and/or Technical Data Packages (TDPs) including engineering drawings, associated lists, and specifications as specified by individual Task order. When required to complete directed task assignments, the contractor shall prepare and/or review new or existing drawings and specifications.

5.1.2 Courseware Development

If required by individual task order the contractor may be required to develop, modify, validate or upgrade courseware material. This may include online training courses, training manuals, training aids, or textbooks.

5.2 Functional Category II

Systems Design, Engineering, Development

System Design and Engineering Development shall apply when the task requires new parts design, or added functionality for a system and/or subsystem.

The contractor shall use a systems engineering approach in the accomplishment of design, engineering, development, and manufacturing efforts, which in turn shall ensure that mission objectives and weapon system requirements relating to individual task orders are met. Important factors shall include the demonstration of clear and definable improvements in the performance, accuracy, reliability, maintainability, supportability, deployability, survivability, cost effectiveness and/or service life of the hardware and/or software item, subsystem, system, weapon, or process. New parts, software, or systems shall be designed and produced to integrate with existing system components and software if applicable. System Design, Engineering, and Development activities shall take into account maintenance, repair, and operational support requirements, including corrosion prevention, EMC compatibility, safe design, human factors engineering, standard items and nuclear hardness to ensure lower overall life cycle costs and a design that can in turn be effectively supported.

5.3 Functional Category III

Software/Firmware

The contractor may design, develop, test, deliver and maintain the software necessary to satisfy the requirements established by a specific task order. Example software/firmware includes, but is not limited to, the following:

- 1) Operational Flight Programs (OFPs)
- 2) Mission Support/Planning
- 3) Computer Modeling and Simulation
- 4) Automatic Test Equipment (ATE)
- 5) Command, Control, Communications, and Intelligence (C4I)
- 6) Automated Data Processing Equipment [ADPE]
- 7) Process Automation
- 8) Software Development and Support Environments/Tools
- 9) Software for automating paper-based processes
- 10) Electronic repositories
- 11) Data base Creation/management
- 12) Test Software
- 13) Web development
- 14) Information Technology support

All software/firmware items designated as Computer Software Configuration Items (CSCIs) shall be designed, developed, and tested in accordance with government and/or industry standards as specified by each Task order. In addition to being documented within the software specification, all firmware designated as CSCIs shall be documented in engineering drawings. All firmware shall be described and identified in the system specification and discussed at a system level design review. The Government shall designate how each of the firmware elements is to be managed and documented. Each firmware element shall be designated as a CSCI or as part of a hardware Configuration Item (CI). Existing government software support environments shall be utilized where possible. Any new software support requirements resulting from a new or modified design shall be specified. This support can augment existing IT support for personal computers and networking issues.

5.4 Functional Category IV

5.4.1 Activities in Support of Operations/Processes for Maintenance and Repair

This category shall apply when the task requires overhaul of a system, but does not add functionality. – in other words – the system or subsystem still has the same functionality, but does it more efficiently and reliability.

The contractor shall provide services to support and/or activities to support process analysis and improvements for maintenance/repair operations. Improvements shall include, but not be limited to: reliability, maintainability, supportability, modernization, performance, cost effectiveness, environmental friendliness, and/or service life of support hardware and/or software items, systems, subsystems, or processes, such as, but not limited to, lean logistics and maintenance transformation. Purchase and refurbishment of equipment. New components, software, or systems shall be designed to integrate with existing system components and software.

5.4.2 Support Equipment Studies

The contractor may, as required be individual task order provide analyses to assist in the determination of weapon system support equipment requirements. Analyses could cover the full spectrum of support requirements from conceptual system support studies through planning for actual equipment installs. Studies shall include, but not be limited to, levels of maintenance, support equipment, training, technical orders, site activation task force, configuration/commonality/refurbishment of equipment, modification accountability, and crises supportability investigations. Support equipment requirements shall be structured to encourage the use of existing tools and equipment. The contractor may be required by individual task order to design or redesign support/test, modernize and/or purchase and refurbish equipment as applicable. The application of commercial-off-the-shelf equipment shall be considered for each application.

5.4.3 Support Equipment Improvement/Technology Insertion

The contractor if required, shall plan, design, develop, document and verify Support/Handling/Test Equipment and items and associated software required to support and maintain systems, or portions of the system. This may include, but is not limited to: equipment, tools, etc., used to service, repair, assemble, disassemble, test, inspect or otherwise maintain the equipment. It may also include any production of duplicate or modified factory test or tooling equipment delivered to the Government for use in maintaining the system. The Contractor shall utilize standard commercially available equipment to the fullest extent possible. These systems may include but are not limited to ground support equipment, powered support equipment, non-powered support equipment, and material handling equipment. Test and measurement systems may include but are not limited to test measurement and diagnostic equipment, precision measuring equipment, automatic test equipment, manual test equipment, test-program sets, appropriate interconnect devices, automated load modules, related software, firmware and support hardware (power supply equipment, etc) used at all levels of maintenance. Packages that enable a line or shop replaceable unit, printed circuit boards, or similar items to be diagnosed using automatic test equipment are also included.

5.4.4 Process Modeling, Analysis, and Re-Engineering

Process modeling, analysis, and re-engineering may be performed as specified by individual Task order. Process characterization involves the development of 'as-is' or baseline models. Baseline models provide a structured approach to define how operations are currently performed, to determine the reasons for current success, and to identify those areas in need of improvement. After implementation, this baseline can be used to measure process improvement. As required by Task order, the information system collecting data used for the model may be evaluated for adequacy and potential contribution to the management, analysis, and improvement of the process. In general, the steps of process modeling and improvement/re-engineering are: process baseline, stochastic simulation modeling (when appropriate), and analysis and recommendations.

The contractor may conduct on-site analysis at the location of the process to be modeled. If specified in the individual task order, the contractor shall capture the definition of the process using industry standard methods and appropriate automated tools. Detailed site surveys might include data collection, process familiarization, and review of facility layouts. The baseline may also include details of existing facilities, equipment, direct and indirect labor, personnel skill levels, process specific technologies, workload volume and mix, material handling and storage systems, and other information deemed relevant. The focus of this task shall be on those items that generate a significant portion of costs, flow time, pollution, or performance problems. The contractor shall determine material flow and decision logic as appropriate for the process being modeled.

If required by individual task order, the Contractor shall design, develop, construct, purchase and install systems and/or automated/mechanized processes necessary to optimize maintenance and repair activities IAW the task order CET. These activities may include:

- a) Process Baseline
- b) Stochastic simulation
- c) Simulation databases
- d) Manpower resources by shift and skill level
- e) Mean Time Between Failure (MTBF)
- f) Mean Time To Repair (MTTR) for each piece of equipment
- g) Long term and temporary workload
- h) Process flows including
 - 1) Sequence, location
 - 2) Equipment requirement
 - 3) Materials and supplies requirements
 - 4) Labor standard
 - 5) Process time
 - 6) Occurrence factor
 - 7) Labor skill level for each operation
 - 8) The breakdown of end items into components
 - 9) Material handling and storage capacity
- i) Data Correlation Validation
- j) Simulation Modeling Documentation
- k) Verification of Simulation Models

- l) Validation of Simulation Models
- m) Process Analysis
- n) Recommendations
- o) Process Improvement
- p) Process Implementation
- q) Safety Engineering Analysis

5.5 Functional Category V

Environmental, Health, and Safety

If specified by individual task order the contractor may be required to provide engineering and other professional services to provide for pollution prevention, environmental compliance, and actively pursue the health and well being of military and civilian personnel as a vital component of the weapon system and/or its critical processes. The contractor may be required to assist the Air Force in determining and implementing actions necessary to ensure that all environmental, health, and safety policies, regulations, and laws are adhered to. All engineering solutions submitted to the Air Force shall require consideration of the impact to the environment and to the worker's health and safety. Compliance to appropriate EPA, OSHA, and local government and state regulations is required. Task order efforts include, but are not limited to:

- 1) Environmental Impact Studies
- 2) Remediation
- 3) Process Improvement
- 4) Automated Reporting/Tracking
- 5) Pollution Prevention
- 6) Regulatory Permitting
- 7) Compliance Monitoring
- 8) Response to Notices of Violation
- 9) Substance Replacement
- 10) Technology Insertion
- 11) Facility design/layout
- 12) Equipment redesign for ergonomic improvements
- 13) Vulnerability Studies
- 14) Environmental Management
- 15) Repair/production improvement/implementation
- 16) Environmental compliance.
- 17) Explosives Safety Site Planning
- 18) Safety Engineering Analysis

PWS Appendix I

Systems/Applications Listing

PERFORMANCE WORK SPECIFICATION (PWS)

FOR THE

DESIGN & ENGINEERING SUPPORT PROGRAM II (DESP II)

Appendix I

Systems/Applications Listing

The following is a list of sample systems and applications. Their related engineering, design, integration, and activities to support process analysis and improvements for maintenance/repair operations are included within the scope of DESP II. The listed systems are **examples only**. This is not to be considered an all-inclusive list.

- A. Aircraft/Air Vehicle Systems, Subsystems & Components, such as:
 - Structures/Composites
 - Radar
 - Avionics
 - Landing Gear
 - Electronic Warfare
 - Fire Control
 - Engines
 - Electrical
 - Electronic
 - Support Equipment
- B. Ground Equipment/Ground Transportation
 - Vehicles (tracked and wheeled)
 - Ground Support Equipment
- C. Munitions/Missiles
- D. Gas Generating, Dispensing & Handling Systems
 - Fueling/Defueling
 - Liquid Fuels
 - Other Materials (ex: N₂, O₂, H₂, CO₂, etc.)
- E. Contained in Various Applications
 - Power Transmission Equipment
 - Electric Motors, Generators, etc.
 - Automatic Test Equipment (ATE)
 - Test Facilities
 - System Safety
- F. Industrial Engineering & Infrastructure
 - IT Infrastructure & Support
 - Management Information Systems
 - Software Development
 - Industrial Improvements

- G. Ground Systems
 - Ground Radar
 - Early Warning
 - Threat Simulation
 - Air Traffic Control Systems
 - Weather Systems
 - Shelters
- H. Environmental Research
 - Remediation
 - Clean/Alternative fuels
 - Waste treatment
- I. Space Systems
 - Space-based Navigation & Tracking/Targeting Systems
 - Military Satellite Communications Systems
 - Weather Satellite Systems
 - Space Based Infra-Red Reconnaissance Systems
 - Space Based Electronic Intelligence Gathering Systems
 - Intercontinental Ballistic Missile Warning Systems
 - Space Surveillance Systems

Appendix II

Data Item Description (DID) Listing

Pick List

23 June 2004

DESIGN & ENGINEERING SUPPORT PROGRAM (DESP II)

DESIGN AND ENGINEERING SUPPORT PROGRAM (DESP II)

SUMMARY OF DATA ITEMS

The following list provides possible DIDs to be used for DESP II task orders. Additional DIDs may be requested that are not included on this list, which will be submitted to the contracting officer for incorporation into the basic contract.

CDRLs with a sequence number starting with an "A" (A001, A002,...) are not separately priced. CDRLs with a sequence number starting with an "B" (B001, B002,...) are separately priced.

The following DIDs are representative of those that may be dictated by an individual task order. This list is not meant to be exhaustive or inclusive of all that may be required, referenced, or otherwise identified within a given Task Order. The government Task Order Manager, if desired, may require that a CDRL comply with a specific DID or Military Standard, even if the DID or Standard has been rescinded, cancelled, or exists only in a draft form. The government Task Order Manager may likewise require the contractor to comply with an identified industry or commercial standard or request contractor format or utilize existing contractor data.

<u>Sequence Number</u>	<u>Data Item Description</u>	<u>Title</u>
A001	<u>DI-ADMN-81249A</u>	CONFERENCE AGENDA
A002	<u>DI-ADMN-81250A</u>	CONFERENCE MINUTES
A003	<u>DI-ADMN-81308</u>	CONFERENCE REPORT
A004	<u>DI-ATTS-81270</u>	TESTABILITY PROGRAM PLAN
A005	<u>DI-ATTS-81271</u>	TESTABILITY REQUIREMENTS ANALYSIS REPORT
A006	<u>DI-ATTS-81273</u>	TEST DESIGN AND ASSESSMENT REPORT
A007	<u>DI-CMAN-80639C</u>	ENGINEERING CHANGE PROPOSAL (ECP)
A008	<u>DI-CMAN-80643C</u>	SPECIFICATION CHANGE NOTICE (SCN)
A009	<u>DI-CMAN-80792A</u>	VALIDATION REPORT
A010	<u>DI-CMAN-80858B</u>	CONTRACTOR'S CONFIGURATION MANAGEMENT PLAN
A011	<u>DI-CMAN-81022C</u>	CONFIGURATION AUDIT SUMMARY REPORT
A012	<u>DI-DRPR-81242</u>	INSTALLATION CONTROL DRAWINGS
A013	<u>DI-EMCS-80201B</u>	ELECTROMAGNETIC INTERFERENCE TEST PROCEDURES (EMITP)
A014	<u>DI-EMCS-81295A</u>	ELECTROMAGNETIC EFFECTS VERIFICATION PROCEDURES (EMEVP)
A015	<u>DI-ENVR-81014</u>	ENVIRONMENTAL STRESS SCREENING PROCEDURES AND IMPLEMENTATION PLAN
A016	<u>DI-GDRQ-80567A</u>	SUBSYSTEM DESIGN ANALYSIS REPORT
A017	<u>DI-GDRQ-80650</u>	DESIGN DATA AND CALCULATIONS
A018	<u>DI-ILSS-81070</u>	TRAINING PROGRAM DEVELOPMENT AND MANAGEMENT PLAN
A019	<u>DI-IPSC-80409</u>	INTEGRATED CIRCUIT GRAPHICS DATA BASE
A020	<u>DI-IPSC-81427A</u>	SOFTWARE DEVELOPMENT PLAN (SDP)
A021	<u>DI-IPSC-81428A</u>	SOFTWARE INSTALLATION PLAN (SIP)
A022	<u>DI-IPSC-81429A</u>	SOFTWARE TRANSITION PLAN (STRP)
A023	<u>DI-IPSC-81431A</u>	SYSTEM/SUBSYSTEM SPECIFICATION (SSS)
A024	<u>DI-IPSC-81432A</u>	SYSTEM/SUBSYSTEM DESIGN DESCRIPTION (SSDD)

A025	<u>DI-IPSC-81433A</u>	SOFTWARE REQUIREMENTS SPECIFICATION (SRS)
A026	<u>DI-IPSC-81435A</u>	SOFTWARE DESIGN DESCRIPTION (SDD)
A027	<u>DI-IPSC-81438A</u>	SOFTWARE TEST PLAN (STP)
A028	<u>DI-IPSC-81439A</u>	SOFTWARE TEST DESCRIPTION (STD)
A029	<u>DI-IPSC-81440A</u>	SOFTWARE TEST REPORT (STR)
A030	<u>DI-IPSC-81441A</u>	SOFTWARE PRODUCT SPECIFICATION (SPS)
A031	<u>DI-IPSC-81442A</u>	SOFTWARE VERSION DESCRIPTION (SVD)
A032	<u>DI-IPSC-81443A</u>	SOFTWARE USER MANUAL (SUM)
A033	<u>DI-IPSC-81444A</u>	SOFTWARE CENTER OPERATOR MANUAL (SCOM)
A034	<u>DI-IPSC-81445A</u>	SOFTWARE INPUT/OUTPUT MANUAL (SIOM)
A035	<u>DI-MCCR-80499</u>	COMPUTER AIDED CHIP DEVELOPMENT DATA
A036	<u>DI-MCCR-80500</u>	COMPUTER AIDED CELL DEVELOPMENT DATA
A037	<u>DI-MGMT-80033</u>	SITE PREPARATION REQUIREMENTS AND INSTALLATION PLAN
A038	<u>DI-MGMT-80061A</u>	ENGINEERING AND TECHNICAL SERVICES ACCOMPLISHMENT REPORT
A039	<u>DI-MGMT-80227</u>	CONTRACTOR'S PROGRESS, STATUS AND MANAGEMENT REPORT
A040	<u>DI-MGMT-80368</u>	STATUS REPORT
A041	<u>DI-MGMT-80797</u>	PRODUCIBILITY ANALYSIS REPORT
A042	<u>DI-MGMT-81024</u>	SYSTEM ENGINEERING MANAGEMENT PLAN (SEMP)
A043	<u>DI-MISC-80071E</u>	PARTS APPROVAL REQUESTS
A044	<u>DI-MISC-80072D</u>	PROGRAM PARTS SELECTION LIST (PPSL)
A045	<u>DI-MISC-80508A</u>	TECHNICAL REPORT - STUDY/SERVICES
A046	<u>DI-MISC-80526D</u>	PARTS MANAGEMENT PLAN
A047	<u>DI-MISC-80711A</u>	SCIENTIFIC AND TECHNICAL REPORTS
A048	<u>DI-MISC-80748</u>	ENGINEERING SERVICES MEMORANDUM (ESM)
A049	<u>DI-NDTI-80809B</u>	TEST/INSPECTION REPORT
A050	<u>DI-NDTI-81284</u>	TEST AND EVALUATION PROGRAM PLAN (TEPP)
A051	<u>DI-QCIC-80125B</u>	GOVERNMENT INDUSTRY DATA EXCHANGE PROGRAM (GIDEP) ALERT/SAFE-ALERT REPORT
A052	<u>DI-QCIC-80126B</u>	GIDEP ALERT/SAFE-ALERT RESPONSE
A053	<u>DI-QCIC-80127A</u>	GIDEP ANNUAL PROGRESS REPORT
A054	<u>DI-QCIC-80278A</u>	CALIBRATION AND MEASUREMENT REQUIREMENTS SUMMARY (CMRS)
A055	<u>DI-QCIC-80509</u>	INSTALLATION-ENGINEERING PLAN
A056	<u>DI-QCIC-80510</u>	INSTALLATION SPECIFICATION
A057	<u>DI-QCIC-80511</u>	INSTALLATION TEST PROCEDURES
A058	<u>DI-QCIC-80512</u>	INSTALLATION TEST REPORT
A059	<u>DI-QCIC-80553</u>	ACCEPTANCE TEST PLAN
A060	<u>DI-QCIC-80864</u>	SCANNING ELECTRON MICROSCOPE ANALYSIS REPORT
A061	<u>DI-QCIC-80890</u>	MECHANICAL WORST CASE ANALYSIS REPORT OF DIMENSIONS AND TOLERANCES
A062	<u>DI-QCIC-80922</u>	SPECIAL ACCEPTANCE INSPECTION EQUIPMENT OPERATING MANUAL
A063	<u>DI-QCIC-80924</u>	SEMICONDUCTOR PROCESS SPECIFICATION
A064	<u>DI-QCIC-81005</u>	SPECIAL INSPECTION EQUIPMENT OPERATING INSTRUCTIONS
A065	<u>DI-QCIC-81006</u>	SPECIAL INSPECTION EQUIPMENT DESCRIPTIVE DOCUMENTATION
A066	<u>DI-QCIC-81007</u>	SPECIAL INSPECTION EQUIPMENT CALIBRATION PROCEDURES
A067	<u>DI-QCIC-81009</u>	TECHNICAL DATA PACKAGE QUALITY CONTROL PROGRAM PLAN
A068	<u>DI-QCIC-81013</u>	TECHNICAL DATA PACKAGE VALIDATION REPORT
A069	<u>DI-RELI-80254</u>	CORRECTIVE ACTION PLAN
A070	<u>DI-RELI-80255</u>	FAILURE SUMMARY AND ANALYSIS REPORT
A071	<u>DI-RELI-80669A</u>	ELECTROSTATIC DISCHARGE (ESD) CONTROL PROGRAM FLAG

A072	<u>DI-RELI-80670A</u>	REPORTING RESULTS OF ELECTROSTATIC DISCHARGE (FSD) SENSIVITY TESTS OF ELECTRICAL AND ELECTRONIC PARTS ASSEMBLIES AND EQUIPMENT
A073	<u>DI-RELI-80671A</u>	HANDLING PROCEDURES FOR ELECTROSTATIC DISCHARGE (ESD) SENSITIVE ITEMS
A074	<u>DI-RELI-80685</u>	CRITICAL ITEMS LIST
A075	<u>DI-SAFT-80101B</u>	SYSTEM SAFETY HAZARD ANALYSIS REPORT (SSHA)
A076	<u>DI-SAFT-80102B</u>	SAFETY ASSESSMENT REPORT (SAR)
A077	<u>DI-SAFT-80106B</u>	HEALTH HAZARD ASSESSMENT REPORT (HHAR)
A078	<u>DI-TMSS-80067B</u>	TECHNICAL MANUAL (TM) CONTRACTOR FURNISHED AERONAUTICAL EQUIPMENT OR CONTRACTOR FURNISHED EQUIPMENT (CFAE/CFE) NOTICES
A079	<u>DI-TMSS-80527A</u>	COMMERCIAL OFF-THE-SHELF (COTS) MANUAL AND ASSOCIATED SUPPLEMENTAL DATA